

### **AMENDMENTS TO THE CLAIMS**

1. **(Previously Presented)** An isolated nucleic acid molecule encoding a branching enzyme from a bacterium of the genus *Neisseria* selected from the group consisting of
  - (a) a nucleic acid molecule encoding a protein which comprises the amino acid sequence depicted in SEQ ID NO. 2;
  - (b) a nucleic acid molecule comprising the coding region depicted in SEQ ID NO. 1;
  - (c) a nucleic acid molecule encoding a protein which comprises the amino acid sequence encoded by the insert in plasmid DSM 12425;
  - (d) a nucleic acid molecule comprising the coding region which is contained in the insert of the plasmid DSM 12425;
  - (e) a nucleic acid molecule encoding a protein the sequence of which has, in the first 100 amino acids, a homology of at least 95% to the amino acid sequence depicted in SEQ ID NO. 2, and wherein positions 1-7 are SEQ ID NO:8, positions 52-57 are SEQ ID NO:9, positions 88-94 are SEQ ID NO:10, positions 100-104 are SEQ ID NO:11, positions 109-113 are SEQ ID NO:12 and positions 115-119 are SEQ ID NO:13; and
  - (f) a nucleic acid molecule having more than 90% identity with SEQ ID NO:1.
2. **(Original)** A vector containing a nucleic acid molecule according to claim 1.
3. **(Original)** The vector according to claim 2, wherein the nucleic acid molecule is linked in sense-orientation to regulatory sequences guaranteeing the transcription in prokaryotic or eukaryotic cells.
4. **(Original)** A host cell which is genetically modified with a nucleic acid molecule according to claim 1 or with a vector according to claim 2 or 3.

5. **(Original)** A method for producing a branching enzyme from a bacterium of the genus *Neisseria*, wherein a host cell according to claim 4 is cultivated under conditions allowing the expression of the protein, and wherein the protein is isolated from the cultivated cells and/or the culture medium.
6. **(Withdrawn)** A method for producing a branching enzyme from a bacterium of the genus *Neisseria*, wherein the protein is produced in an in-vitro transcription and translation system using a nucleic acid molecule according to claim 1.
7. **(Withdrawn)** A protein encoded by a nucleic acid molecule according to claim 1 or obtainable by a method according to claim 5.
8. **(Withdrawn)** An antibody which specifically recognises a protein according to claim 7.
9. **(Withdrawn)** Use of a protein according to claim 7 for producing  $\alpha$ -1,6-branched  $\alpha$ -1,4-glucans in in-vitro systems.
10. **(Original)** A transgenic plant cell containing a nucleic acid molecule according to claim 1, wherein the nucleic acid molecule is linked to regulatory sequences guaranteeing the transcription in plant cells.
11. **(Original)** The transgenic plant cell according to claim 10, wherein the nucleic acid molecule is linked to a sequence encoding a signal sequence which guarantees the localisation of the encoded protein in the plastids of the cells.

12. **(Original)** A transgenic plant containing plant cells according to claim 10.
13. **(Original)** A method for producing a transgenic plant, wherein
- (a) a plant cell is genetically modified by introducing a nucleic acid molecule according to claim 1 or a vector according to claim 2 or 3;
  - (b) a plant is regenerated from the cell produced according to step (a); and
  - (c) optionally further plants are produced from the plant produced according to step (b).
14. **(Previously Presented)** Harvestable parts of plants according to claim 12, wherein said parts of plants contain transgenic plant cells.
15. **(Withdrawn)** Starch obtainable from transgenic plant cells according to claim 1 or from parts of plants containing said transgenic plant cells.
16. **(Withdrawn)** The starch according to claim 15, wherein the composition of the starch is modified in such a way that it has an increased gel texture and/or a reduced phosphate content and/or a reduced peak viscosity and/or a reduced pastification temperature and/or a reduced size of the starch granules and/or a modified distribution of the side-chains in comparison with the starch from corresponding wild type plants.
17. **(Previously Presented)** The isolated nucleic acid molecule according to claim 1 having more than 95% identity with SEQ ID NO:1.

18. **(Previously Presented)** The isolated nucleic acid molecule according to claim 1 which encodes the amino acid sequence depicted in SEQ ID NO:2.

19. **(Previously Presented)** The isolated nucleic acid molecule according to claim 1 which has the sequence depicted in SEQ ID NO:1.

20. **(Previously Presented)** The isolated nucleic acid molecule according to claim 1 which encodes the amino acid sequence encoded by the insert in plasmid DSM 12425.

21. **(Previously Presented)** A vector containing a nucleic acid molecule according to any one of claims 17-20.

22. **(Previously Presented)** A host cell which is genetically modified with a vector according to claim 21.

23. **(Currently Amended)** A method for producing a branching enzyme from a bacterium of the genus *Neisseria*, wherein a host cell ~~according to claim 22~~ which is genetically modified with a vector containing a nucleic acid molecule selected from the group consisting of a nucleic acid having more than 95% identity with SEQ ID NO:1, a nucleic acid which encodes the amino acid sequence depicted in SEQ ID NO:2, a nucleic acid molecule which has the sequence depicted in SEQ ID NO:1 and a nucleic acid molecule which encodes the amino acid sequence encoded by the insert in plasmid DSM 12425 is cultivated under conditions allowing the expression of the protein, and wherein the protein is isolated from the cultivated cells and/or the culture medium.

24. **(Previously Presented)** A transgenic plant cell containing a nucleic acid molecule according to any one of claims 17-20, wherein the nucleic acid molecule is linked to regulatory sequences guaranteeing the transcription in plant cells.
25. **(Previously Presented)** The transgenic plant cell according to claim 24, wherein the nucleic acid molecule is linked to a sequence encoding a signal sequence which guarantees the localisation of the encoded protein in the plastids of the cells.
26. **(Previously Presented)** A transgenic plant containing a plant cell according to claim 24.
27. **(Previously Presented)** A method for producing a transgenic plant, wherein
- (a) a plant cell is genetically modified by introducing a nucleic acid molecule according to any one of claims 17-20;
  - (b) a plant is regenerated from the cell produced according to step (a); and
  - (c) optionally further plants are produced from the plant produced according to step (b).
28. **(Previously Presented)** Harvestable parts of a plant according to claim 26, wherein said parts of plants contain transgenic plant cells.
29. **(Previously Presented)** The host cell according to claim 4, which is a bacterial cell.

30. **(Previously Presented)** The host cell according to claim 22, which is a bacterial cell.

31. **(Previously Presented)** The host cell according to claim 29, which is an E. coli cell.

32. **(Previously Presented)** ~~The A host cell~~ which is genetically modified with a vector containing a nucleic acid molecule selected from the group consisting of a nucleic acid having more than 95% identity with SEQ ID NO:1, a nucleic acid which encodes the amino acid sequence depicted in SEQ ID NO:2, a nucleic acid molecule which has the sequence depicted in SEQ ID NO:1 and a nucleic acid molecule which encodes the amino acid sequence encoded by the insert in plasmid DSM 12425 ~~according to claim 30,~~ which is an E. coli cell.

33. **(Previously Presented)** The host cell according to claim 4, which is a fungal cell.

34. **(Currently Amended)** ~~The A host cell according to claim 22~~ which is genetically modified with a vector containing a nucleic acid molecule selected from the group consisting of a nucleic acid having more than 95% identity with SEQ ID NO:1, a nucleic acid which encodes the amino acid sequence depicted in SEQ ID NO:2, a nucleic acid molecule which has the sequence depicted in SEQ ID NO:1 and a nucleic acid molecule which encodes the amino acid sequence encoded by the insert in plasmid DSM 12425, which is a fungal cell.

35. **(Previously Presented)** The host cell according to claim 33, which is a yeast cell.

36. **(Previously Presented)** The host cell according to claim 34, which is a yeast cell.
37. **(Previously Presented)** The host cell according to claim 4, which is a plant cell.
38. **(Previously Presented)** The host cell according to claim 22, which is a plant cell.
39. **(Previously Presented)** The host cell according to claim 37, wherein said plant is selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.
40. **(Previously Presented)** The host cell according to claim 38, wherein said plant is selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.
41. **(Previously Presented)** The transgenic plant according to claim 12, wherein said plant is selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.
42. **(Previously Presented)** The transgenic plant according to claim 26, wherein said plant is selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.
43. **(Previously Presented)** The method according to claim 5, wherein said host cell is a bacterial cell.

44. **(Previously Presented)** The method according to claim 23, wherein said host cell is a bacterial cell.

45. **(Currently Amended)** The method according to claim 43, ~~which~~ wherein said host cell is an E. coli cell.

46. **(Currently Amended)** The method according to claim 44, ~~which~~ wherein said host cell is an E. coli cell.

47. **(Previously Presented)** The method according to claim 5, wherein said host cell is a fungal cell.

48. **(Previously Presented)** The method according to claim 23, wherein said host cell is a fungal cell.

49. **(Previously Presented)** The method according to claim 47, which is a yeast cell.

50. **(Previously Presented)** The method according to claim 48, which is a yeast cell.

51. **(Previously Presented)** The method according to claim 13, wherein said plant is a member selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.



52. **(Previously Presented)** The method according to claim 27, wherein said plant is a member selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.

53. **(Previously Presented)** Harvestable parts of plants according to claim 14, wherein said plant is a member selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.

54. **(Previously Presented)** Harvestable parts of plants according to claim 28, wherein said plant is a member selected from the group consisting of wheat, barley, oat, rye, potato, maize, rice, pea, cassava and mung bean.

55. **(NEW)** An isolated nucleic acid molecule from a bacterium of the genus *Neisseria* selected from the group consisting of

(a) a nucleic acid molecule encoding a protein the sequence of which has, in the first 100 amino acids, a homology of at least 95% to the amino acid sequence depicted in SEQ ID NO. 2; and

(b) a nucleic acid molecule encoding a protein which has 90% homology to SEQ ID NO:2